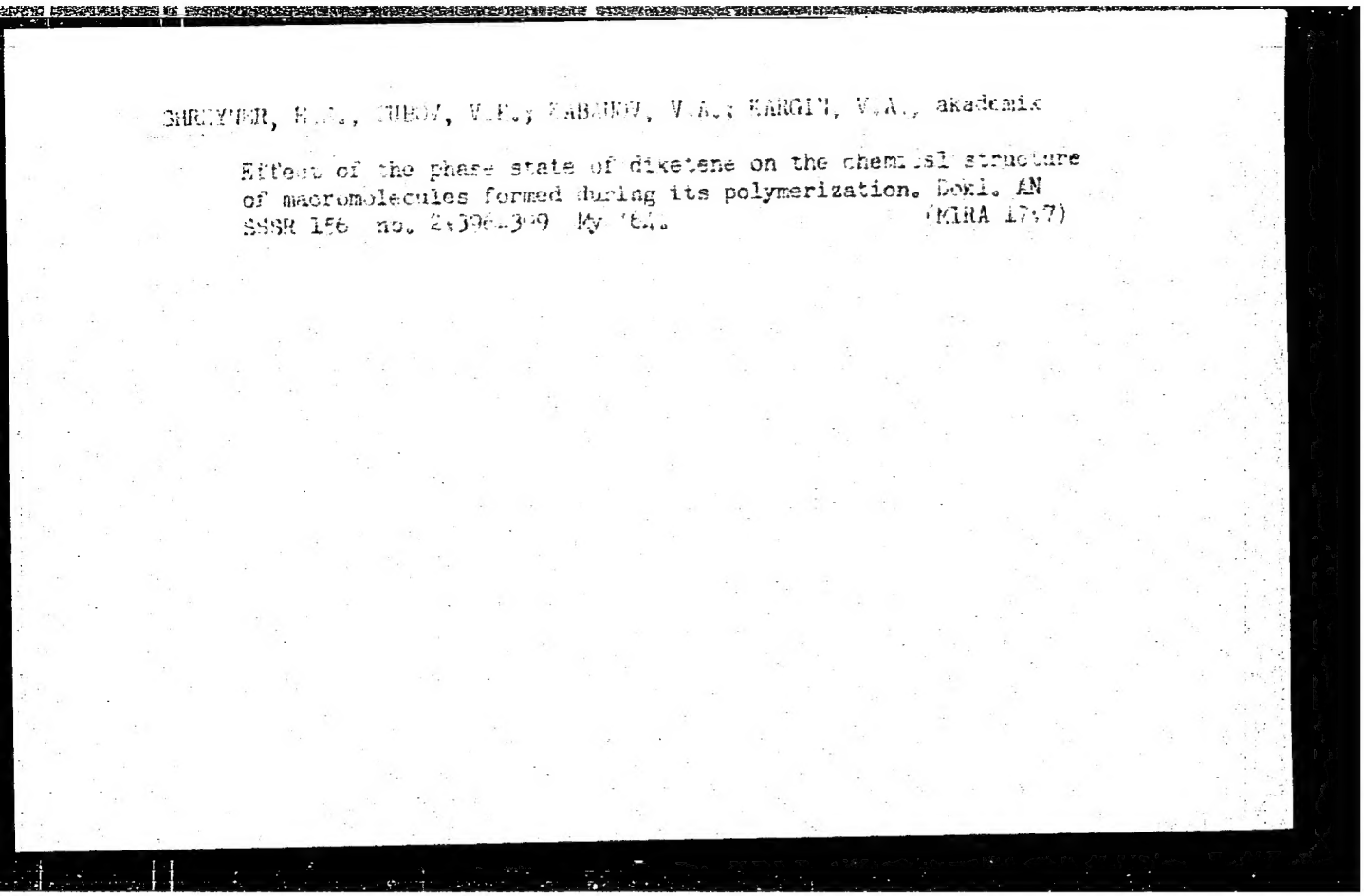
MYULLER, R.L.; ADZHEMYAN, R.TS.; SHREYNER, E.S.

Solution of a convalent atomic solid in a motionless water. Zhur. fiz.khim. 36 no.8:1667-1672 Ag '62. (MIRA 15:8)

1. Leningradskiy gosudarstvennyy universitet.
(Solution (Chemistry))



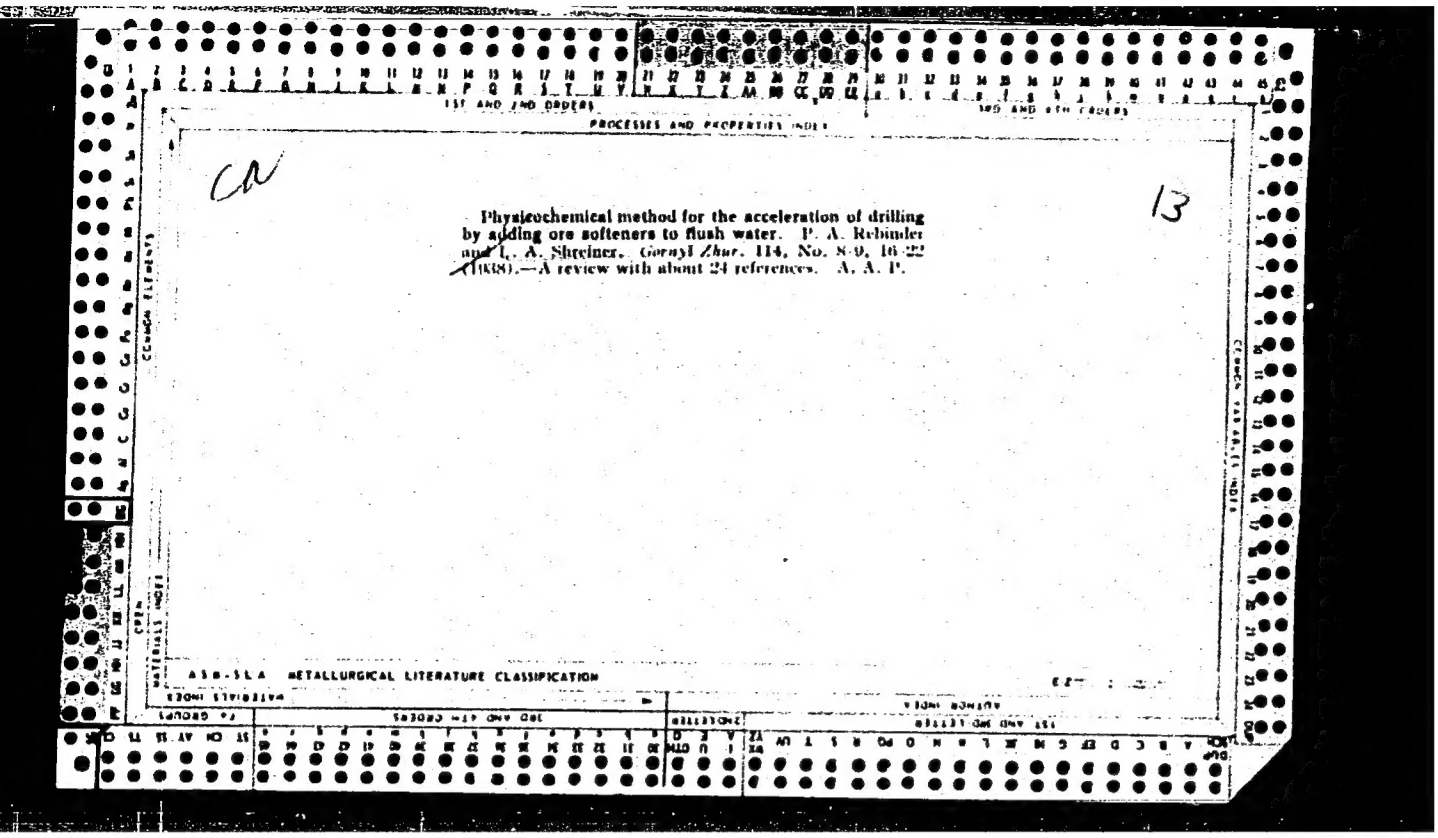
BRUKVER, N.L., GUBOV, V.F., KABANOV, V.A., KARGIN, V.A., akademik

Effect of the phase state of diketene on the chemical structure of macromolecules formed during its polymerization. Dokl. AN SSSR 156 no. 2:396-399 My '64. (MIRA 17:7)

MYULLER, R.L.; SHREYNER, E.S.

Kinetics of dissolution of borax in aqueous dioxane solutions.
Zhur. fiz. khim. 37 no.4:875-879 Ap '63. (MIRA 17:7)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova.

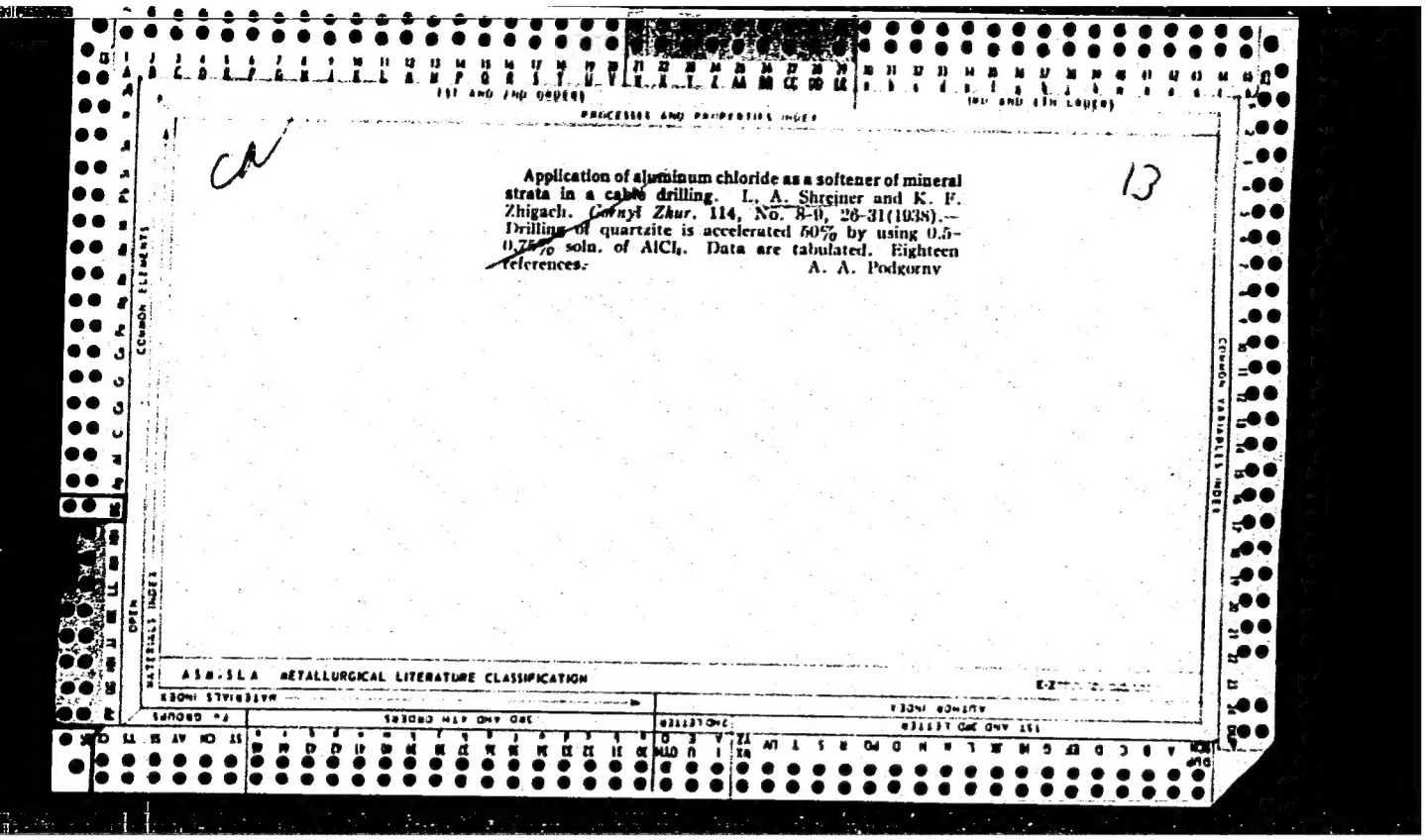


CN

13

Physicochemical method for the acceleration of drilling by adding ore softeners to flush water. P. A. Rebinder and L. A. Shreiner. *Gornyĭ Zhur.* 114, No. 8-9, 16-22 (1938).—A review with about 24 references. A. A. P.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

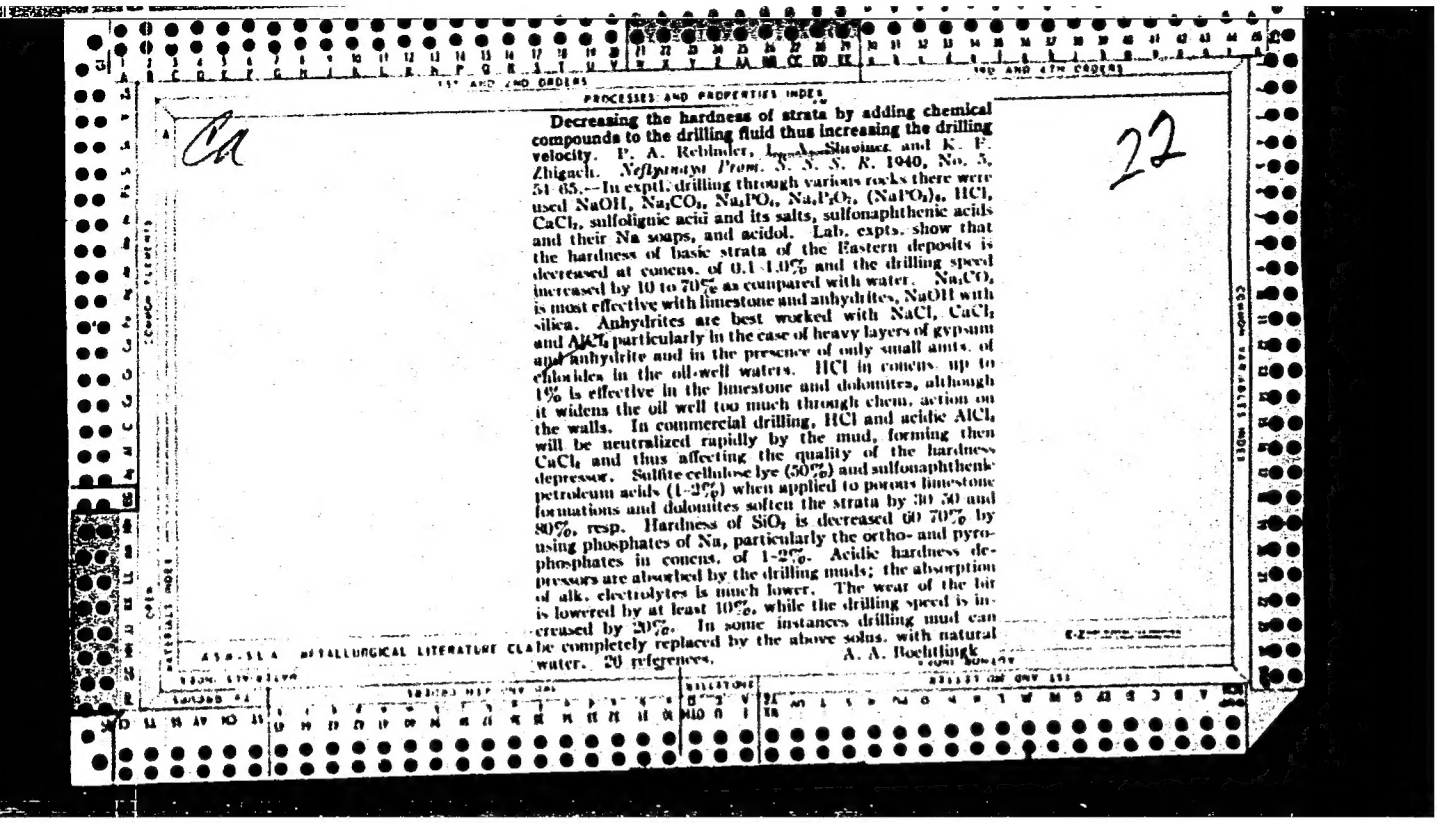


CA

13

Application of aluminum chloride as a softener of mineral strata in a cable drilling. L. A. Shreiner and K. F. Zhigach. *Gornyi Zhur.* 114, No. 8-9, 26-31(1938).—Drilling of quartzite is accelerated 60% by using 0.5-0.75% soln. of $AlCl_3$. Data are tabulated. Eighteen references.

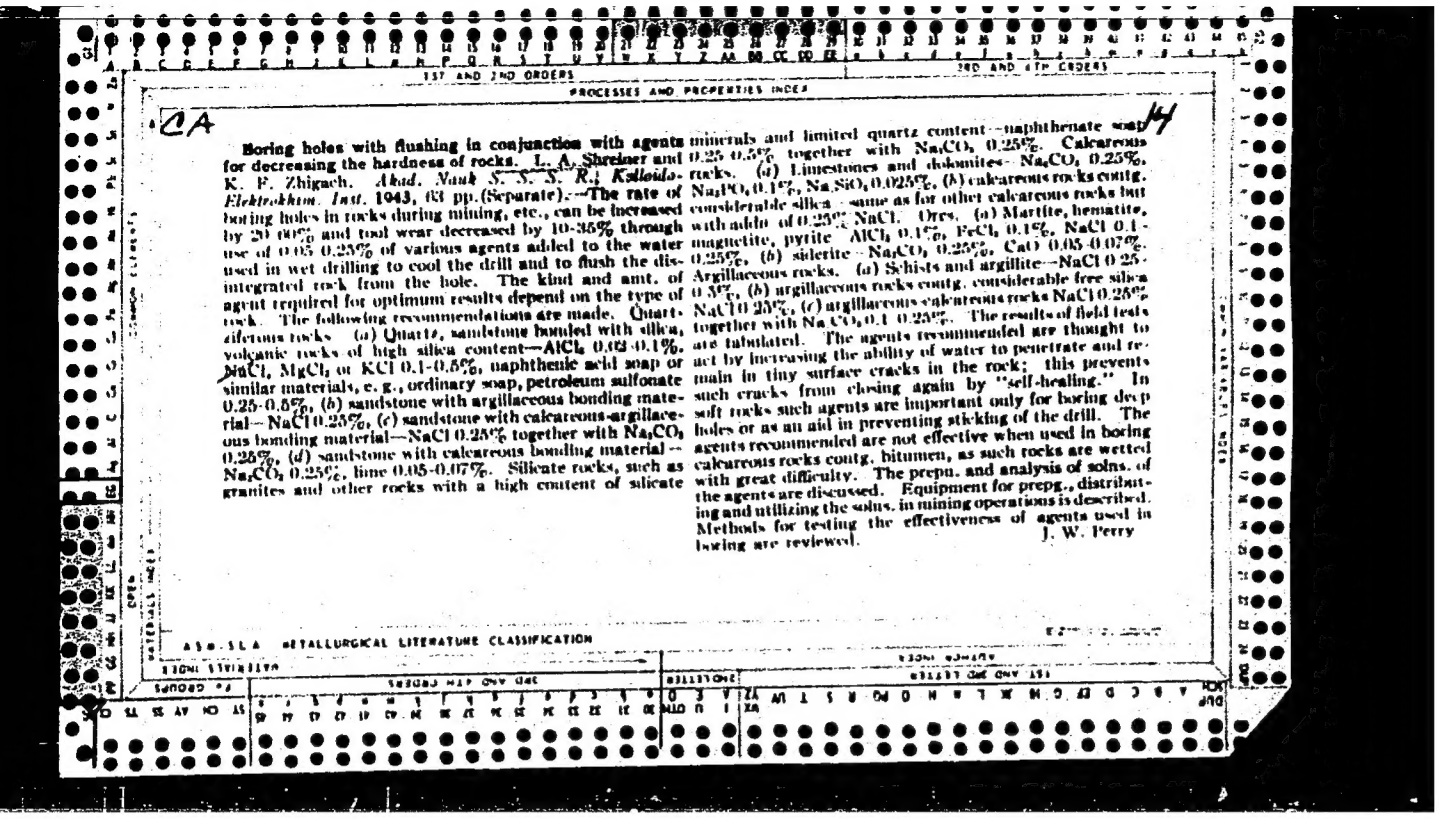
A. A. Podgorny



PROCESSES AND PROPERTIES INDEX

Decreasing the hardness of strata by adding chemical compounds to the drilling fluid thus increasing the drilling velocity. P. A. Rebinder, L. A. Shuvaev and K. F. Zhigach. *Neftyanoye Prom. S. S. S. R.* 1940, No. 3, 51-65.—In exptl. drilling through various rocks there were used NaOH, Na_2CO_3, Na_3PO_4, $Na_4P_2O_7$, $(NaPO_3)_6$, HCl, $CaCl_2$, sulfolignic acid and its salts, sulfonaphthenic acids and their Na soaps, and acidol. Lab. expts. show that the hardness of basic strata of the Eastern deposits is decreased at concns. of 0.1-1.0% and the drilling speed increased by 10 to 70% as compared with water. Na_2CO_3 is most effective with limestone and anhydrites, NaOH with silica. Anhydrites are best worked with NaCl, $CaCl_2$ and $AlCl_3$ particularly in the case of heavy layers of gypsum and anhydrite and in the presence of only small amts. of chlorides in the oil-well waters. HCl in concns. up to 1% is effective in the limestone and dolomites, although it widens the oil well too much through chem. action on the walls. In commercial drilling, HCl and acidic $AlCl_3$ will be neutralized rapidly by the mud, forming then $CaCl_2$ and thus affecting the quality of the hardness depressor. Sulfite cellulose lye (50%) and sulfonaphthenic petroleum acids (1-2%) when applied to porous limestone formations and dolomites soften the strata by 30-50 and 80%, resp. Hardness of SiO_2 is decreased 60-70% by using phosphates of Na, particularly the ortho- and pyrophosphates in concns. of 1-2%. Acidic hardness depressors are absorbed by the drilling muds; the absorption of alk. electrolytes is much lower. The wear of the bit is lowered by at least 10%, while the drilling speed is increased by 30%. In some instances drilling mud can be completely replaced by the above solns. with natural water. 20 references. A. A. Boehtlingk

A54-51A METALLURGICAL LITERATURE CLA



1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

CA

Boring holes with flushing in conjunction with agents for decreasing the hardness of rocks. L. A. Shreiner and K. F. Zhigach. *Akad. Nauk S. S. S. R., Kolloid. Elektrokhim. Inst.* 1943, 63 pp. (Separate).—The rate of boring holes in rocks during mining, etc., can be increased by 20-60% and tool wear decreased by 10-35% through use of 0.05-0.25% of various agents added to the water used in wet drilling to cool the drill and to flush the disintegrated rock from the hole. The kind and amt. of agent required for optimum results depend on the type of rock. The following recommendations are made. Quartziferous rocks. (*a*) Quartz, sandstone bonded with silica, volcanic rocks of high silica content—$AlCl_3$ 0.03-0.1%, NaCl, $MgCl_2$ or KCl 0.1-0.5%, naphthenic acid soap or similar materials, e. g., ordinary soap, petroleum sulfonate 0.25-0.5%, (*b*) sandstone with argillaceous bonding material—NaCl 0.25%, (*c*) sandstone with calcareous-argillaceous bonding material—NaCl 0.25% together with Na_2CO_3 0.25%, (*d*) sandstone with calcareous bonding material—Na_2CO_3 0.25%, lime 0.05-0.07%. Silicate rocks, such as granites and other rocks with a high content of silicate minerals and limited quartz content—naphthenate soap 0.25-0.5% together with Na_2CO_3 0.25%. Calcareous rocks. (*a*) Limestones and dolomites—Na_2CO_3 0.25%, Na_3PO_4 0.1%, Na_2SiO_3 0.025%, (*b*) calcareous rocks contg. considerable silica—same as for other calcareous rocks but with addn. of 0.25% NaCl. Ores. (*a*) Martite, hematite, magnetite, pyrite—$AlCl_3$ 0.1%, $FeCl_3$ 0.1%, NaCl 0.1-0.25%, (*b*) siderite—Na_2CO_3 0.25%, CaO 0.05-0.07%. Argillaceous rocks. (*a*) Schists and argillite—NaCl 0.25-0.5%, (*b*) argillaceous rocks contg. considerable free silica—NaCl 0.25%, (*c*) argillaceous calcareous rocks NaCl 0.25% together with Na_2CO_3 0.1-0.25%. The results of field tests are tabulated. The agents recommended are thought to act by increasing the ability of water to penetrate and react in tiny surface cracks in the rock; this prevents such cracks from closing again by "self-healing." In soft rocks such agents are important only for boring deep holes or as an aid in preventing sticking of the drill. The agents recommended are not effective when used in boring calcareous rocks contg. bitumen, as such rocks are wetted with great difficulty. The prepn. and analysis of solns. of the agents are discussed. Equipment for prepg., distributing and utilizing the solns. in mining operations is described. Methods for testing the effectiveness of agents used in boring are reviewed.

J. W. Perry

A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

SHREINER, L.A.

a50/2480 (Hardness reducers in drilling. A physicochemical method of facilitating the mechanical destruction of rocks during drilling) Ponizitели Tverdosti v Burenii. Fiziko-Khimicheskii Metod Oblegcheniia Mekhanicheskogo Razrusheniia Tverdykh Gornykh Porod pri Burenii, Moscow-Leningrad, 1944. 199 Pages.

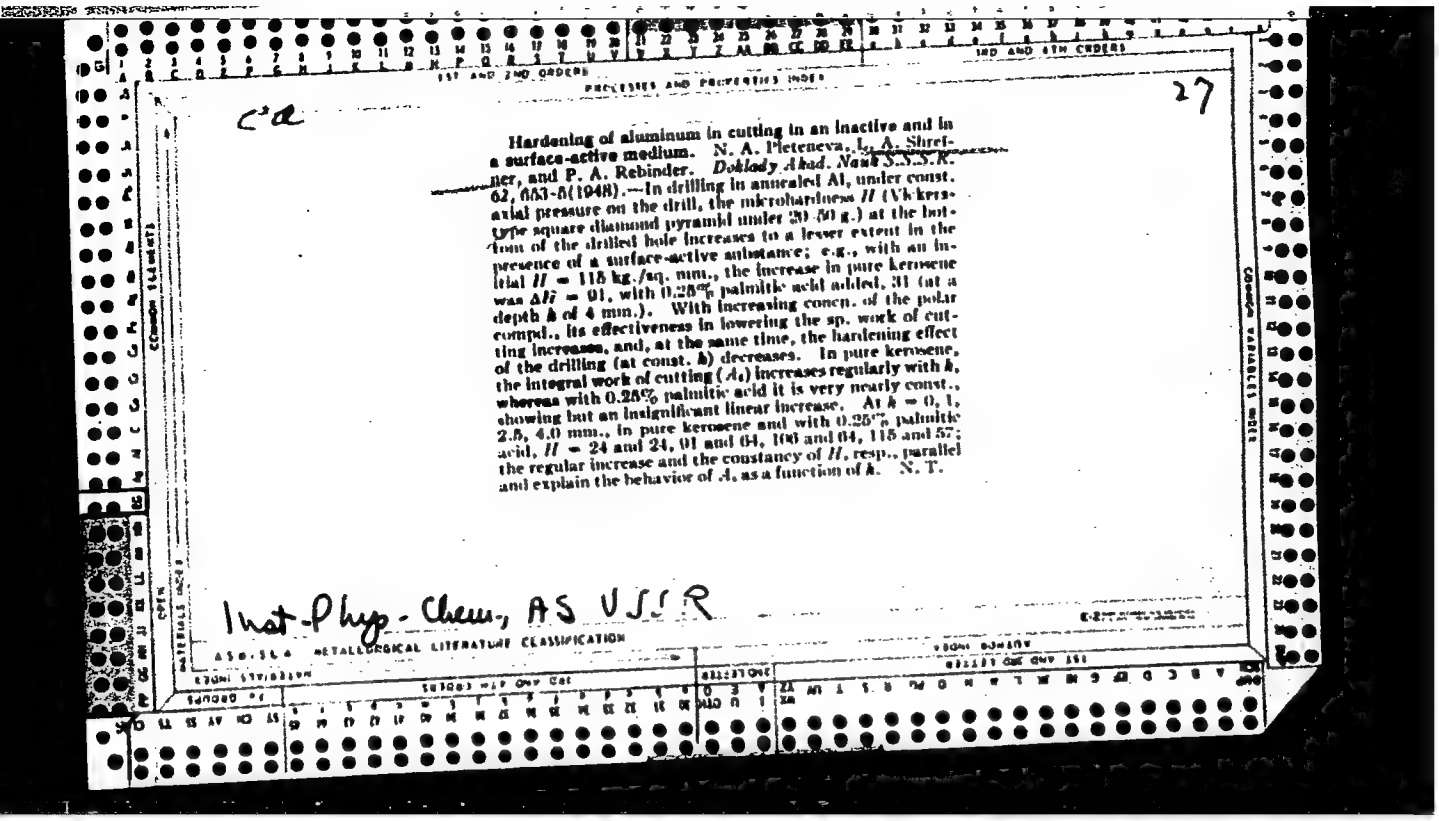
SHREINER, L. A.

"Mechanism for the Destruction of Mountain Rocks by Stamp Drilling. Dok. AN, 57, No. 4, 1947.

Shreyner, L. A.

Shreyner, L. A. "The dependence of the productivity of a cutting instrument on the hardness of the mineral being cut", Neft. khoz-vo, 1943, No. 12, p. 5-8.

SO: U-2888, 12 Feb. 53, (Letopis' Zhurnal 'nykh Statey, No. 2, 1949).



27

Hardening of aluminum in cutting in an inactive and in a surface-active medium. N. A. Pleteneva, L. A. Shrefner, and P. A. Rebinder. *Doklady Akad. Nauk S.S.S.R.* 62, 653-8(1948).—In drilling in annealed Al, under const. axial pressure on the drill, the microhardness *H* (Vickers-type square diamond pyramid under 30–50 g.) at the bottom of the drilled hole increases to a lesser extent in the presence of a surface-active substance; e.g., with an initial *H* = 115 kg./sq. mm., the increase in pure kerosene was ΔH = 91, with 0.25% palmitic acid added, 31 (at a depth *h* of 4 mm.). With increasing concn. of the polar compd., its effectiveness in lowering the sp. work of cutting increases, and, at the same time, the hardening effect of the drilling (at const. *h*) decreases. In pure kerosene, the integral work of cutting (A_t) increases regularly with *h*, whereas with 0.25% palmitic acid it is very nearly const., showing but an insignificant linear increase. At *h* = 0, 1, 2.5, 4.0 mm., in pure kerosene and with 0.25% palmitic acid, *H* = 24 and 24, 91 and 64, 106 and 64, 115 and 57; the regular increase and the constancy of *H*, resp., parallel and explain the behavior of A_t as a function of *h*. N. T.

Inst-Phys-Chem., AS USSR

SHREYNER, L. A.

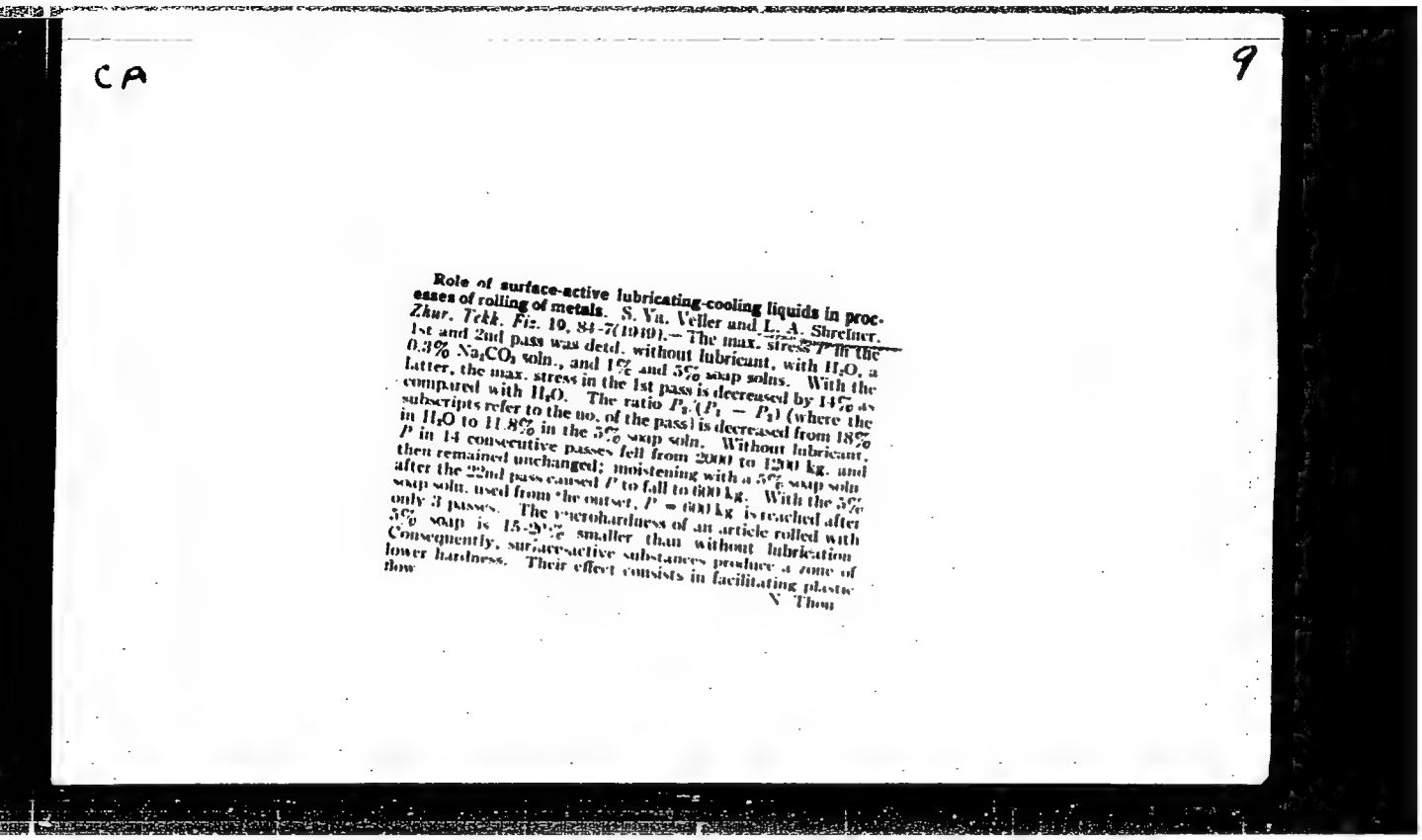
USSR/Physics Plastic Deformation Cold-Hardening Nov 48

"Development of the Plastic Deformation Region and Cold Hardening During Deformation of a Metal in the Presence of Surface-Active Substances," T. Yu. Lyubimova, Acad P. A. Rebiner, L. A. Shreyner, Div of Dispersed Systems, Inst of Phys Chem, Acad Sci USSR, 3 pp

"Dok Ak Nauk SSSR" Vol LXIII, No 3

Variations in hardness with removal from the surface show extent of cold-hardening zone. Direct observations of the deformation zone show the region of extermal dispersion of metal grains is greater during deformation in an active medium. Dispersion of crystallite also proceeds more intensely. Submitted 27 Sep 48.

PA 55/49T104



CA

9

Role of surface-active lubricating-cooling liquids in processes of rolling of metals. S. Yu. Veller and L. A. Shrelner. *Zhur. Tekh. Fiz.* 19, 84-7(1949).—The max. stress P in the 1st and 2nd pass was detd. without lubricant, with H_2O, a 0.3% Na_2CO_3 soln., and 1% and 5% soap solns. With the latter, the max. stress in the 1st pass is decreased by 14% as compared with H_2O. The ratio $P_2/(P_1 - P_2)$ (where the subscripts refer to the no. of the pass) is decreased from 18% in H_2O to 11.8% in the 5% soap soln. Without lubricant, P in 14 consecutive passes fell from 2000 to 1250 kg. and then remained unchanged; moistening with a 5% soap soln after the 22nd pass caused P to fall to 600 kg. With the 5% soap soln. used from the outset, P = 600 kg. With the 5% soap is 15-20% smaller than without lubrication Consequently, surface-active substances produce a zone of lower hardness. Their effect consists in facilitating plastic flow

V. Thou

CA

New principle of evaluation of the effectiveness of lubricating materials in the working of metals under pressure. S. Ya. Veller and L. A. Shrchuck. *Doklady Akad. Nauk S.S.S.R.* 68, [illegible] A steel ball of 6.310 mm. diam. is pressed repeatedly through an oblique cylindrical 6.200-mm. bore in a metal sample (Cu or brass), and the load P is measured as a function of the penetration h, with and without lubricant. Curves of P against h show a max. P_m. The values of P diminish with each following pass, and the max. becomes flatter. If P_m is plotted against the no. n of consecutive passes, the descending curve, obtained in the presence of a lubricant (5%, soln. of a soap contg. 50% fatty acids), is found to lie considerably below that obtained without lubricant; thus, at $n = 1$ (1st pass), $P_m = 80$ and 138 kg., resp. The effect is evidently detd. not only by a decrease of friction but also by increased ease of plastic deformation in the surface layer, owing to the presence of surface-active substances. After a certain no. of passes, P_m becomes const.; this takes place, in the absence of a lubricant, after 14 passes, and, in its presence, after 5. This indicates that, with a surface-active substance, the process of plastic flow in the surface layer is completed sooner.

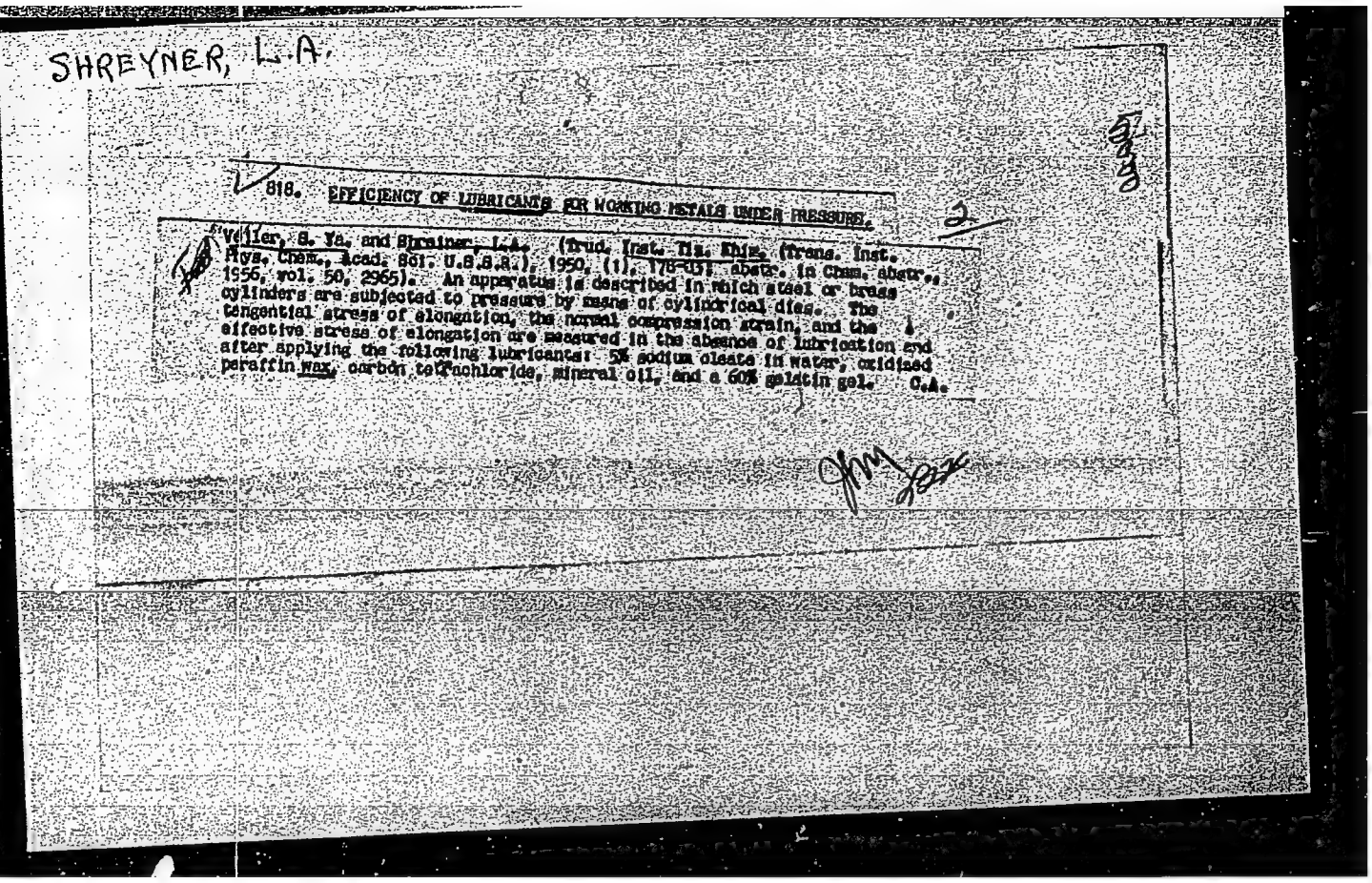
N. Thon

Dept. of Dispersed Systems, Inst. Phys. Chem., AS USSR

SHREINER, I. A.

Physical principles of the mechanics of rock formation; mechanical properties and demolition processes in boring Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1950. 210 p. (50-34609)

TN281.S58



SHREYNER, L.A.

818. EFFICIENCY OF LUBRICANTS FOR WORKING METALS UNDER PRESSURE.

Veller, S. Ya. and Shreiner, L.A. (Trud. Inst. Tik. Khim. (Trans. Inst. Phys. Chem., Acad. Sci. U.S.S.R.), 1950, (1), 178-191 abstr. in Chem. Abstr., 1956, vol. 50, 2965). An apparatus is described in which steel or brass cylinders are subjected to pressure by means of cylindrical dies. The tangential stress of elongation, the normal compression strain, and the effective stress of elongation are measured in the absence of lubrication and after applying the following lubricants: 5% sodium oleate in water, oxidized paraffin wax, carbon tetrachloride, mineral oil, and a 60% gelatin gel. C.A.

SHREYNER, L. A.

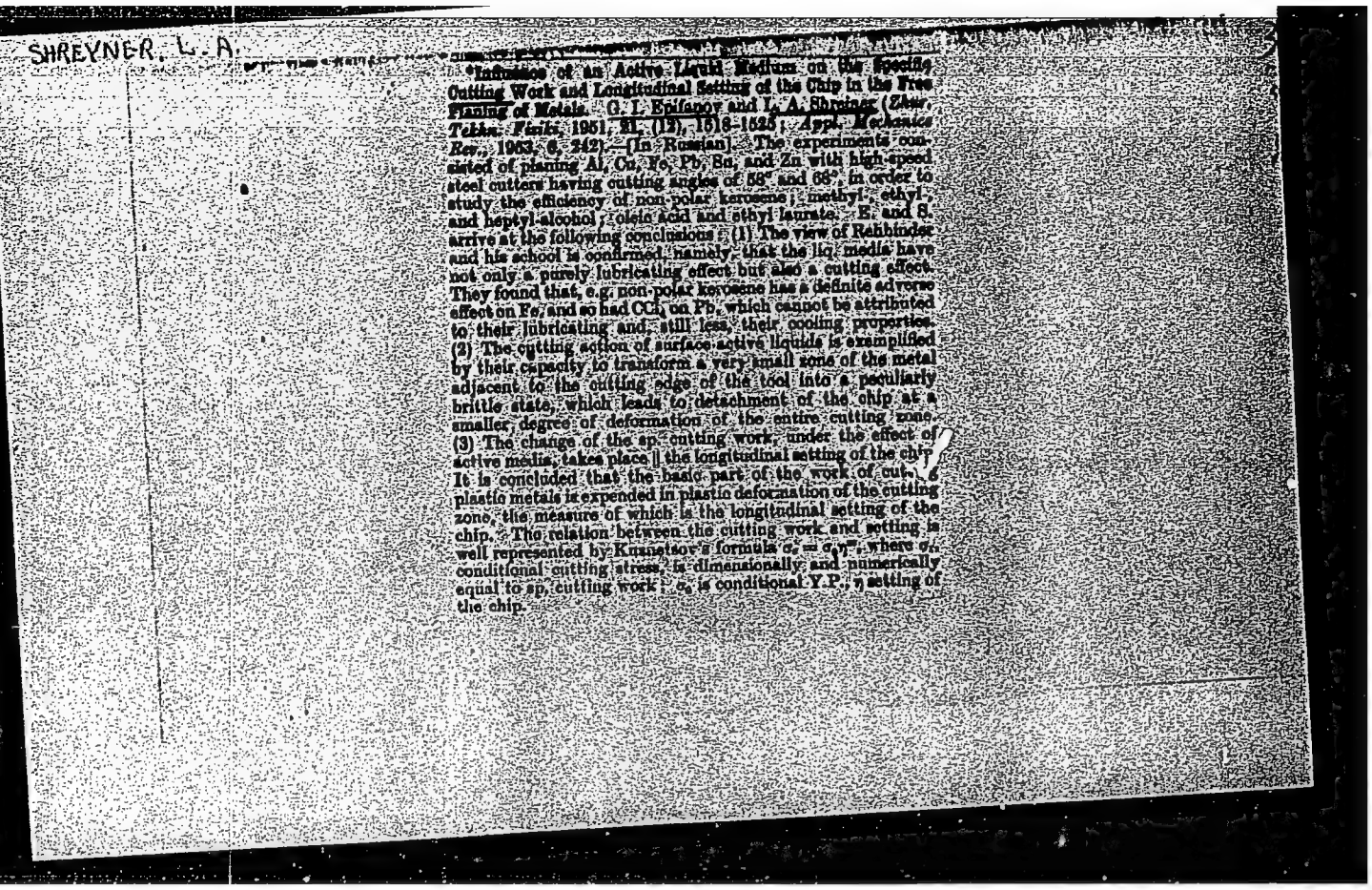
(4)

4

Investigation of the lubricating action on a model of deep drawing. S. Ya. Veller, L. A. Shreiner, and P. A. Rehinder (Inst. Phys. Chem., Acad. Sci. U.S.S.R., Moscow). *Doklady Akad. Nauk S.S.S.R.* 73, 511–13(1950).—A band of metal folded in a U-shape is drawn out with the aid of a vertical die, between 2 horizontal cylindrical matrixes, and the normal compressive stress N exerted between the matrixes and the die is recorded by an indicator connected with the spring dynamometer housing the matrixes. These detns. of N, along with the tangential stress P (identical with the vertical load acting on the die), give the conventional friction coeff. $f = P/N$, the effective stamping stress $\sigma_1 = P/2S_1$, and the stretching stress $\sigma_2 = P/2S_2$, where S_1 = area of the cross-section removed, and S_2 = area of the cross-section after reduction. For a given metal, σ_1 remains const. independently of the degree of reduction, and varies depending on the medium. Thus, a 10 × 10 × 1-mm. steel sample gave, between 7 and 50–60% reduction, in CCl_4, dry, in spindle oil, in 60% gelatin gel, and in oxidized paraffin, σ_1 (mean) = 106, 72, 67, 61, and 44 kg./sq. mm., resp., and brass, dry, in 5% aq. Na oleate, in oxidized paraffin, and in CCl_4, σ_1 (mean) = 55, 33, 25, and 83 kg./sq. mm. The lubricant dets. also the max. possible reduction, e.g., for steel in CCl_4, in mineral oil, and in oxidized paraffin, it is 49, 57, and 65%, resp. The increased ability of the metal to be drawn out in the presence of lubricants is due not only to reduced friction, but also to the greater ease of surface flow in the presence of surface-active substances. The stretching stress σ_2 increases with the reduction; its max. value, at rupture, varies between narrow limits, and shows some parallelism with f; the latter magnitude, for steel, at P = const., was found = 0.28 in CCl_4 and 0.15 in oxidized paraffin.

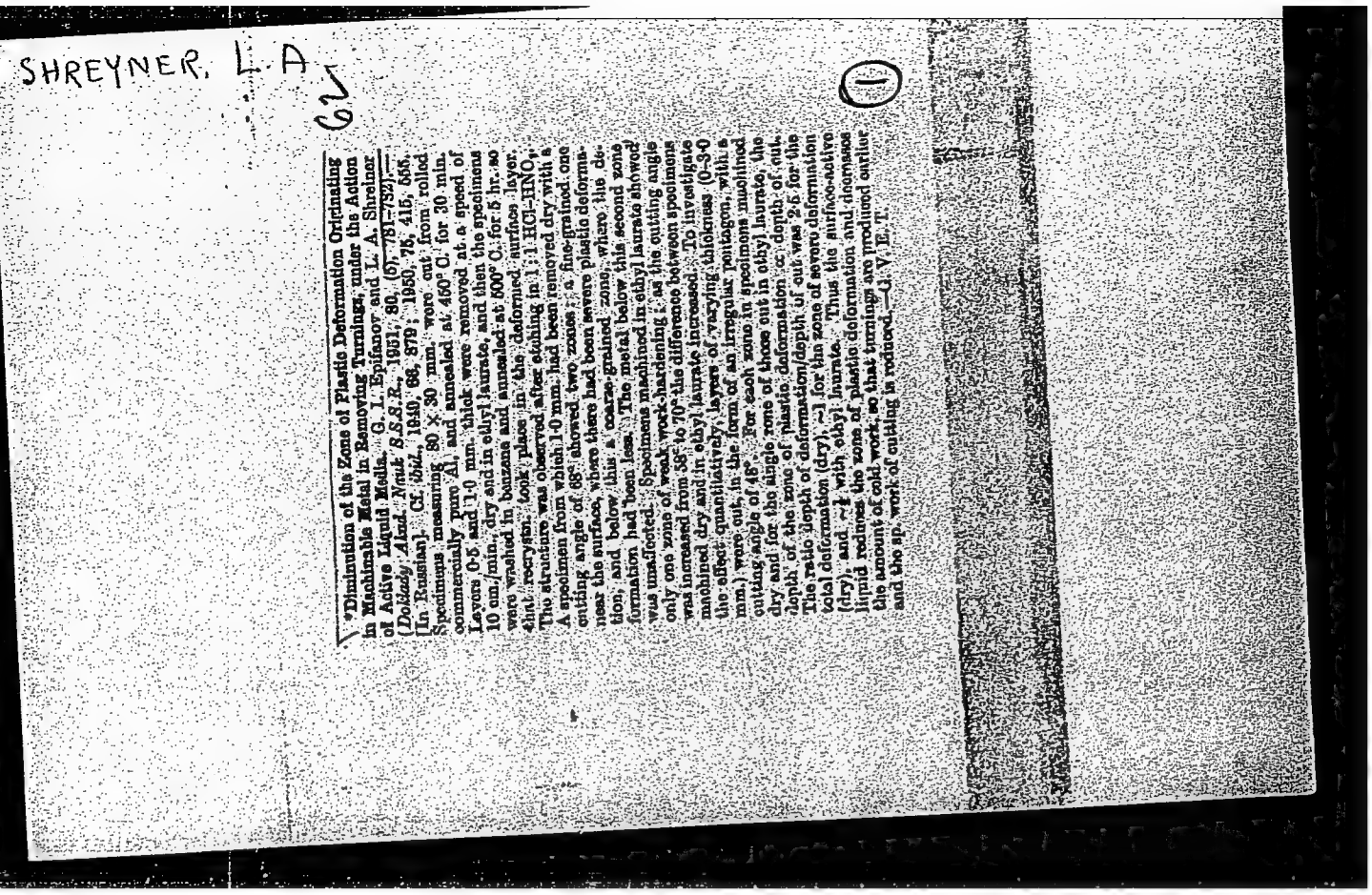
N. Thon

Evaluation B-792 94, 1 Nov 54



SHREYNER, L. A.

*Influence of an Active Liquid Medium on the Specific Cutting Work and Longitudinal Setting of the Chip in the Free Planing of Metals. G. I. Epifanov and L. A. Shreiner (Zhur. Tekhn. Fiziki, 1951, 21, (12), 1518-1525; Appl. Mechanics Rev., 1953, 6, 242).—[In Russian].—The experiments consisted of planing Al, Cu, Fe, Pb, Sn, and Zn with high-speed steel cutters having cutting angles of 58° and 68°, in order to study the efficiency of non-polar kerosene; methyl-, ethyl-, and heptyl-alcohol; oleic acid and ethyl laurate. E. and S. arrive at the following conclusions: (1) The view of Rehbinder and his school is confirmed, namely, that the liq. media have not only a purely lubricating effect but also a cutting effect. They found that, e.g. non-polar kerosene has a definite adverse effect on Fe, and so had CCl_4 on Pb, which cannot be attributed to their lubricating and, still less, their cooling properties. (2) The cutting action of surface active liquids is exemplified by their capacity to transform a very small zone of the metal adjacent to the cutting edge of the tool into a peculiarly brittle state, which leads to detachment of the chip at a smaller degree of deformation of the entire cutting zone. (3) The change of the sp. cutting work, under the effect of active media, takes place || the longitudinal setting of the chip. It is concluded that the basic part of the work of cut. of plastic metals is expended in plastic deformation of the cutting zone, the measure of which is the longitudinal setting of the chip. The relation between the cutting work and setting is well represented by Kuznetsov's formula $\sigma_c' = \sigma_s \eta^2$, where σ_c', conditional cutting stress, is dimensionally and numerically equal to sp. cutting work; σ_s is conditional Y.P., η setting of the chip.



SHREYNER, L.A.

627

(1)

Diminution of the Zone of Plastic Deformation Originating in Machinable Metal in Removing Turnings, under the Action of Active Liquid Media. G. I. Epifanov and L. A. Shreiner (*Doklady Akad. Nauk S.S.S.R.*, 1951, 80, (5), 781–782).—[In Russian]. Cf. *ibid.*, 1940, 68, 879; 1950, 75, 415, 656. Specimens measuring 80 × 30 mm. were cut from rolled commercially pure Al, and annealed at 460° C. for 30 min. Layers 0·5 and 1·0 mm. thick were removed at a speed of 10 cm./min. dry and in ethyl laurate, and then the specimens were washed in benzene and annealed at 500° C. for 5 hr. so that recrystn. took place in the deformed surface layer. The structure was observed after etching in 1 : 1 HCl–HNO$_3$. A specimen from which 1·0 mm. had been removed dry with a cutting angle of 68° showed two zones; a fine-grained one next the surface, where there had been severe plastic deformation, and below this a coarse-grained zone, where the deformation had been less. The metal below this second zone was undistorted. Specimens machined in ethyl laurate showed only one zone of weak work-hardening; as the cutting angle was increased from 58° to 70° the difference between specimens machined dry and in ethyl laurate increased. To investigate the effect quantitatively, layers of varying thickness (0·3–0 mm.) were cut, in the form of an irregular polygon, with a cutting angle of 48°. For each zone in specimens machined dry and for the single zone of those cut in ethyl laurate, the depth of the zone of plastic deformation a; depth of cut, depth of deformation/depth of cut was 2·6 for the The ratio total deformation (dry), ~1 for the zone of severe deformation (dry), and ~1 with ethyl laurate. Thus the surface-active liquid reduces the zone of plastic deformation and decreases the amount of cold work so that turnings are produced earlier and the op. work of cutting is reduced.—J. Y. E. T.

VEYLER, S. YA., SHREYNER, L. A.

Lubrication and lubricants

Method for investigation of the effectiveness lubricants used in treatment of metals under pressure.
Trudy Inst. Fiz. khimii AN SSSR No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED.

SHREYNER, L.A.

In the Petroleum Institute of the Academy of Sciences of the U.S.S.R. Izv. AN SSSR Otd.tekh.nauk no.9:1364 S '53. (MLRA 6:10) (Petroleum)

SHREYNER L. A.

USSR/Chemistry

Card 1/1

Authors : Shreyner, L. A.

Title : About the D. B. Gogoberidze and associates reports regarding problems of the effect of surface active substances on the mechanical properties of metals and the pendulum method of hardness measuring.

Periodical : Zhur. Fiz. Khim, 28, Ed. 3, 558-559, March 1954

Abstract : A critical analysis is presented of the reports by D. B. Gogoberidze and associates regarding the effect of surface active substances on the mechanical properties of metals and about the pendulum method of measuring hardness. The work is considered useless since similar experimental data, expecially data given in the O.Neil book entitled "hardness of metals", are already described in literature. Doubt is also expressed with respect to the pendulum method of measuring hardness, the method is found unrelieable and misleading in many ways. Fifteen references.

Institution : Acad. of Sc. U.S.S.R. Institute of Physical Chemistry, Moscow

Submitted : September 24, 1953

SHREYNER, L. N.

AID P - 277

Subject : USSR/Engineering

Card : 1/1

Authors : Shreyner, L. A. and Pavlov, N. N.

Title : Mechanism of destruction of hard rocks and new types of cutter drills

Periodical : Neft. Khoz., v. 32, #4, 9-15, Ap 1954

Abstract : The author discusses the mechanism of destruction of soft and hard rocks in relation to the contact surface, specific pressure of cutter drills and velocity of drilling. The following characters of destruction are considered: (1) Surface destruction, (2) fatigue destruction and (3) normal (volumetric) destruction. The operation of a new type of cutter drill with semispheric teeth is described and illustrated with test data. 2 tables, 7 charts, 7 references 2 Russian, (1947-52)

Institution : None

Submitted : No date

SHREYNER, L.A.

SHREYNER, L.A.; PETROVA, O.P.

Determination of plastic properties of rocks. Dokl.AN SSSR 96 no.3:511-513 My '54. (MLRA 7:6)

1. Institut nefti Akademii nauk SSSR. Predstavleno akademikom S.A.Khristianovichem. (Rocks) (Plasticity)

SHREYNER. L. A.

USSR/Physics Techn. Physics

Card : 1/1

Authors : Shreyner, L. A. and Epifanov, G. I.

Title : Strengthening coefficient of metallic monocrystals

Periodical : Dokl. AN SSSR, 97, Ed. 1, 85 - 87, July 1954

Abstract : The phenomenon called "the strengthening coefficient" is explained. The displacement of one part of the crystal relative to the other, in a narrow band oriented in a sliding surface, is apparently the result of the non-homogeneous displacement of atoms which distort the crystal lattice and hinder free displacement. The quantitative measure of strengthening is expressed by the tangent of the sloping angle of the curve which expresses the relation between the shearing stress and the magnitude of the specific crystallographic displacement. Four USSR references. Graph.

Institution : Acad. of Sc. USSR, Institute of Physical Chemistry

Presented by : Academician, P. A. Rebinder, March 30, 1954

Evaluation B-82138, 17 Jan 55

AID P - 3620

Subject : USSR/Mining

Card 1/1 Pub. 78 - 4/20

Authors : Shreyner, L. A., V. P. Yakushev, O. P. Petrova and A. T. Portnova

Title : Classification of rocks according to their mechanical characteristics

Periodical : Neft. khoz., v. 33, #10, 15-23, O 1955

Abstract : The author makes an analysis of the purely mechanical characteristics of rocks that are important for proper use of drilling equipment in penetrating the formations. An apparatus is described which was used to determine the compressive strength, resilience, plasticity and breaking point of brittle, plastic-brittle, and non-brittle rocks. Some data of those tests are given. 4 references, 1949-1955.

Institution : None

Submitted : No date

SHREYNER, L.A.; GAN' CHZHI-TSZYAN' [Kan Chih-chien].

Effect of revolutions per minute on drilling rate when using cone and roller bits. Neft. khoz. 34 no.12:13-17 D '56. (MLRA 10:8)
(Oil well drilling)

PHASE I BOOK EXPLOITATION 976

Shreyner, Leonid Aleksandrovich, Petrova, Ol'ga Pavlovna, Yakushev, Vasiliy Petrovich, Portnova, Anna Timofeyevna, Sadilenko, Konstantin Mikhaylovich, Klochko, Nikolay Aleksandrovich, Pavlova, Nina Nikolayevna, Balandin, Pavel Stepanovich, Spivak, Aleksandr Ivanovich

Mekhanicheskiye i abrazivnyye svoystva gornykh porod (Mechanical and Abrasive Properties of Rocks) Moscow, Gostoptekhizdat, 1958. 200 p. 3,000 copies printed.

Gen. Ed.: Shreyner, L.A., Professor; Executive Ed.: Kovaleva, A.A.; Tech Ed.: Polosina, A.S.

PURPOSE: The book is intended for scientists, engineers and technicians engaged in drilling operations in the petroleum and mining industries.

COVERAGE: The book describes methods of evaluating the mechanical properties of rocks by means of the stamp-pressing technique. This method makes it possible to determine simultaneously the hardness, plas-

Card 1/6

SHREYNER, L.A.

14(5) p-3,8 PHASE I BOOK EXPLOITATION SOV/1393

Akademiya nauk SSSR. Institut nefti

Trudy, t. 11. Neftepromyslovoye delo (Transactions of the Petroleum Institute, Academy of Sciences, v. 11. Oil Field Industry) Moscow, Izd-vo AN SSSR, 1958. 346 p. 2,000 copies printed.

Resp. Ed.: Krylov, A.P.; Ed. of Publishing House: Sevina, Z.A.; Tech. Ed.: Kiseleva, A.A.

PURPOSE: This book is intended for geological engineers specializing in oil well drilling and oilfield operations.

COVERAGE: This book, a collection of 26 articles, describes the mineral composition of hard, friable, and plastic rocks, their deformation and destruction at various geological platforms of the Soviet Union; it further presents designs of rock bits with different cutters, which can be successfully used for crushing various formations. The effect of electric current on binding

Card 1/10

substances such as cement slurry, plaster and lime solutions, as well as their treatment with electric current carried out to accelerate hardening are also discussed. It is stated that electric current may be used for strengthening the walls of a well, and that this promising method has been successfully tested on various cores. Designs of electrodes used for this purpose are presented. Drilling of deep wells with conventional and sectional turbodrills is analyzed, and turbodrill parts described. Oil well drilling in eastern Soviet regions appears to be complicated by an excessive filtration of drilling fluid into formations of various horizons. To overcome this, methods improving the plugging properties of cement slurry are proposed. In this connection the adhesion of stone-like cement to rocks of different composition has been studied with the aid of various apparatus, and the filtration of drilling fluid into formations of Tatar Republic oilfields has been analyzed. Methods of eliminating the negative centrifugal force of presently used deep well pumps are proposed, as are new systems of pump jacks. The restoration of bottom-hole pressure in formations with

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varying permeability is investigated on the basis of theoretical calculations and graphs. Attempts to extract petroleum from the loose sands of the Romashkino oilfield by injecting water or certain petroleum products, free of paraffin and tar, are described and results of experiments given. The method of stimulating petroleum flow in various petroliferous provinces by injecting high pressure gas into a partially depleted formation is explained, and some recommendations given. The process of subterranean burning of a part of the petroleum deposit, as a thermal method of petroleum recovery, is discussed, and laboratory experiments illustrated by numerous graphs. Tectonics of soft, clayey rocks are investigated in connection with the problem of caving, and the results of experiments made to ascertain the effect of tension and moisture on the stability of such rocks are analyzed. The influence of pressure on the selective saturation of quartz rocks with water or petroleum, as well as on the saturation of porous rocks is investigated. Laboratory experiments were made in an attempt to find out the saturation rate of various minerals wetted with water after being treated

with various solutions. Tests conducted in connection with the problem of equipment corrosion proved that DC-Na solution is a good inhibitor against corrosion and that sulfide coating is a good protective agent for steel against corrosion. The procedure of turbine drilling under different conditions is analyzed and the advisibility of lowering the upstream pressure of the drilling fluid is emphasized. The prevention of caving by applying various methods is discussed, and the application of a coefficient established on the basis of calculations is recommended. Hydraulic fracturing of formations and the treatment of oil wells with hydrochloric acid are also recommended as efficient methods for boosting crude oil production. The development of natural gas recovery in the Saratov and Stalingrad regions is outlined, and the advantage of the utilization of natural gas on a larger scale is emphasized. Bibliographic references accompany each article.

TABLE OF CONTENTS:

YAKUSHER, V.P.; SHREYNER, L.A.

Effect of mineralogical composition and texture of rocks on their hardness and plasticity. Trudy Inst.nefti 11:3-17 '58. (MIRA 11:12)

(Petrology)

PAVLOVA, N.N.; SHREYNER, L.A.

Mechanism of rock destruction and problems in the design of drills for hard, brittle, and plastic-brittle rocks. Trudy Inst.nefti 11:18-45 '58. (MIRA 11:12)
(Rock drills)

SHREYNER, L.A.; PAVLOVA, N.N.

Experimental data on the fatigue break-down of rocks. Trudy Inst.nefti 11:46-52 '58. (MIRA 11:12)
(Rocks--Testing)

BAYDYUK, B.V.; SHREYNER, L.A.

Effect of stress and moisture on the stability of clay soils in wells. Trudy Inst.nefti 11:240-263 '58. (MIRA 11:12)
(Clay)

SPIVAK, A.I.; SHREYNER, L.A.

Abrasive properties of minerals, rocks, and heavy muds. Azerb. neft. khoz. 37 no.4:17-19 Ap '58. (MIRA 11:8)
(Abrasives)

AKMULLIN, M.Sh.; ZHIGACH, K.F.; SHREYNER, L.A.

Effect of flush fluids on the wear resistance of bits. Izv. vys. ucheb. zav.; neft' i gaz 3 no.9:29-32 '60. (MIRA 14:4)

1. Moskovskiy institut neftekhimicheskiy i gazovoy promyshlennosti imeni akademika I.M.Gubkina.
(Oil well drilling fluids) (Boring machinery)

PAVLOVA, N.N.; SHREYNER, L.A.

Effect of the rate of loading on the plasticity of marble in indentation tests. Dokl. AN SSSR 137 no.2:319-322 Mr '61. (MIRA 14:2)

1. Institut geologii i razrabotki goryuchikh iskopayemkh AN SSSR.
(Marble)

S/020/61/139/002/017/017
B103/B220

AUTHORS: Shreyner, L. A., and Sadilenko, K. M.

TITLE: Physicochemical effect of liquid media on the wear of steel and hard alloy on friction with rock

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 139, no. 2, 1961, 427-430

TEXT: The wear of hardened steel grade У8 (U8) and tungsten carbide ВК6 (VK6) was studied on friction with rock (mainly quartz) in the following liquids: (1) water, (2) dodecyl aminoacetate (0.1%), (3) sodium oleate (0.25%), (4) carboxy-methyl cellulose (CMC, 2%), (5) kerosene, and (6) oleic acid (1% in kerosene). In the opinion of the authors, the effect exerted by the physicochemical properties of liquids on the wear of solids is of practical importance, particularly for well sinking. The tests were made by using the apparatus shown in Fig. 1 and specially developed for this purpose by L. A. Shrevner et al. (Ref. 1: Mekhanicheskiye i abrazivnyye svoystva gornykh porod, M., 1958). The rotating disk 1 (diameter 30 mm, thickness 2.5 mm, circumferential speed 47 m/min) is pressed against the surface of specimen 2 by the load P (10 kg); the specimen is moved slowly. The test

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Physicochemical effect of liquid ...

liquids were applied to the contact points of 1 and 2 as flat jets. The volumetric wear of 1 and 2 was determined after each test; the frictional force F between 1 and 2 was measured in the test by a special momentometer. The conditional coefficient of friction $\beta = F/P$ was determined. Also the volumetric abrasion work was determined from F only summarily. Its individual components cannot be analyzed. Thus, the specific abrasion work of frictional forces refers totally to 1 and 2. The authors' test method permits (contrary to conventional methods) to clarify the nature of the phenomena more completely, particularly in the presence of liquids. The initial roughness of friction surfaces was the same in all cases. The effect of liquids on other rocks (lime, pyroxene, microcline, flint) was the same as on quartz. The results are shown in Table 1. Therefrom the authors conclude that β and consequently also the work of the frictional forces are reduced in (2) (cation-active) and in (3) (anion-active) per unit distance to 1/12-1/9, whilst the wear of steel (compared with that in water) is reduced merely to 1/6-1/3. This is only possible if the surface-active substances facilitate the process of destruction, i.e., if they are provided with dispersive properties (Rebinder effect, P. A. Rebinder et al. Ref. 2: Poniziteli tverdosti v burenii (hardness reductors for boring), Izd. AN SSSR,

Card 2/6

Physicochemical effect of liquid ...

1944). In the authors' opinion this is proved by Table 1. Liquid hydrocarbons have quite another effect on abrasion. In (5), β drops to 1/7 while the wear of steel is reduced to 1/40. The abrasion work increases rapidly compared with that in water, i.e., up to six times, since water favors the destruction of steel and quartz contrary to (5). By addition of surface-active substances, the wear is not reduced but increased, since these substances increase the dispersive properties of hydrocarbons more than this is done by lubricants. The effect of (4) (CMC) on wear differs from that of the liquids discussed now. In this case, the wear is lessened due to the polishing effect. At the beginning β in CMC solutions equals β in water, decreases then rapidly and reaches approximately the values that it has in surface-active substances. Parallel to β, but more quickly, also the wear decreases (on quartz). The wear of quartz decreases simultaneously with the wear of steel in all liquids (1)-(6). The effect of surface-active substances in aqueous and hydrocarbon media on the wear itself is related, first of all, with the adsorption phenomena occurring at the outer surface of the friction bodies as well as in the ultra-thin layers adjacent to this surface. Moreover, the destruction on wear is, according to its nature, a fatigue process, whereby the efficiency of liquids is affected. This

Physicochemical effect of liquid ...

efficiency increases with deterioration of the conditions prevailing for the mechanical destruction of solids. The roughness and sharp-edged nature of the friction surface increases from quartz over arenaceous sandstone to abrasive, thus facilitating the mechanical wear of steel. Consequently, the wear of steel decreases in (3), and particularly in (5), far more on quartz than on abrasive. It is difficult to find out which body is affected by the corresponding liquid if friction occurs between bodies of physically so much differing properties. If only one of these bodies is affected, the wear of the other one will also be affected. Special tests with steel-steel and quartz-quartz showed that the effect of the liquid on frictional wear of similar pairs may be transferred on no account to mixed pairs (sometimes not even in qualitative respect). The wear of the hard alloy VK6 due to friction on quartz decreases equally with the use of the same liquids, the effect of the latter, however, amounts only to 1/4-1/2 of that in the case of steel. Furthermore, abrasion usually decreases proportionally to the reduction of frictional forces, i.e., mainly under the action of lubricating properties of liquids. There are 2 figures, 1 table, and 4 Soviet-bloc references.

Card 4/6

Physicochemical effect of liquid ... S/020/61/139/002/017/017
B103/B220

ASSOCIATION: Institut geologii i razrabotki goryuchikh iskopayemykh Akademii nauk SSSR (Institute of Geology and Mining of Mineral Fuels, Academy of Sciences USSR)

PRESENTED: February 17, 1961 by P. A. Rebinder, Academician

SUBMITTED: January 28, 1961

Жидкая среда (7)	Износ на единицу пути, см³/м·10⁶ (8): сталь (9)	кварц (10)	Коэффициент трения, β (11)	Удельная работа износа, кГм/см³·10⁻⁶ (12): сталь (9)	кварц (10)
1 Вода	4,80	22,80	0,73	15	3,4
2 Додециламиноацетат (0,1%)	0,82	6,45	0,06	7,5	1,0
3 Олеат натрия (0,25%)	1,60	4,40	0,08	5	1,8
4 Карбоксиметилцеллюлоза (КМЦ, 2%)	1,07	3,70	0,30	28	8,2
5 Керосин	0,12	1,65	0,10	88	6,3
6 Оленновая кислота (1% в керосине)	0,21	3,50	0,12	58	4,8

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S/844/62/000/000/116/129
D207/D307

AUTHORS: Shreyner, L. A. and Polak, L. S.

TITLE: Utilization of γ radiation for the visualization of plastically deformed regions in minerals and rocks

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd.vo AN SSSR, 1962, 674-676

TEXT: A review is given of the Western work dealing with the irradiation of calcite and marble with Co^{60} γ rays (17×10^6 r) which made visible the plastically deformed regions by color changes. The present authors applied this method successfully to marble and monocrystalline rocksalt in which the shapes and dimensions of the plastically deformed regions were thus clearly established. Ultramarine coloring of some natural rocksalt crystals is ascribed to the plastic deformation in the earth's crust which was followed by irradiation from natural sources. The studies were carried out at the Laboratoriya mekhaniki porod IGiRGI AN SSSR (Laboratory of Me-

Card 1/2

C

KLOCHKO, N.A.; SHREYNER, L.A.

Using bits with cutters made of hard-alloy grains in thermomechanical core drilling. Izv.vys.ucheb.zav.; geol.i razv. 6 no.3:113-117 Mr '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov.
(Core drilling)

PAVLOVA, Nina Nikolayevna; SHREYNER, Leonid Aleksandrovich; LAVROV, N.I., ved. red.

[Breaking rock under dynamic loads] Razrushenie gornykh porod pri dinamicheskom nagruzhenii. Moskva, Nedra, 1964. 158 p. (MIRA 18:2)

ACC NR: AM6026790 Monograph UR/

Pavlova, Nina Nikolayevna; Shreyner, Leonid Aleksandrovich

Destruction of rocks during dynamic loading (Razrusheniye gornykh porod pri dinamicheskom nagruzhenii) Moscow, Izd-vo "Nedra," 1964. 158 p. illus., biblio. 1550 copies printed.

TOPIC TAGS: geology, geologic exploration, mining engineering

PURPOSE AND COVERAGE: This book is intended for engineering-technical and scientific staff members of the oil and mining industry. The authors describe the results of the investigation of mechanical properties of rocks at various rates of deformation. They have established new patterns of behavior of rocks under dynamic load—changes in strength and plastic properties of rocks with increases in the rate of deformation. Particular attention was paid to the analysis of the processes of rock breakage in drilling. It is shown that changes in the strength and plastic properties of rocks with increasing rate of dynamic load affect the process of destruction of rocks in drilling.

TABLE OF CONTENTS [abridged]:

Card 1/2 UDC: NONE

ACC NR: AM6026790

Brief review of investigations of mechanical properties of rocks at varying deformation rates -- 5
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Analysis of the results of investigation and the ways for their practical application -- 106

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SUB CODE: 08, 09/ SUBM DATE: 060ct64/ ORIG REF: 110/ OTH REF: 034

Card 2/2

MARKUZIN, N.P.; SHREYNER, L.S.

Liquid-liquid - vapor equilibrium in the system Propyl alochol-diphenyl oxide - water at 25 . Zhur. prikl. khim. 37 no. 4: 888-889 Ap '64. (MIRA 17:5)

15-1957-3-3103

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 3, p 99 (USSR)

AUTHORS: Kniga, A. G., Shreyner, N. M.

TITLE: Some Properties of Synthetic Calcium Sulfate (O nekotorykh svoystvakh sinteticheskogo sul'fata kal'-tsiya)

PERIODICAL: Tr. Leningr. tekhnol. in-ta pishch. prom-sti, 1955, vol 12, pp 247-252

ABSTRACT: Dihydrated, semihydrated, and anhydrous $CaSO_4$ were synthesized by various methods. The following reagents were used to produce microscopic differences in the preparations: silver nitrate, mercury nitrate, potassium iodate, Rochelle salt, and ammonium oxalate in the presence of ammonium acetate. In all cases 0.1-normal solutions were added to dry samples. Anhydrous $CaSO_4$ quickly reacts with silver nitrate, giving a white precipitate of orthorhombic silver sulfate; with potassium

Card 1/2

KOSHKIN, N.V.; SHREYNER, N.M.

Use of thiosemicarbazides in analysis. Report No.6: Qualitative and quantitative determination of cobalt by means of 1-phenylthiosemicarbazide. Zhur.anal.khim. 18 no.6:757-760 Je '63. (MIRA 16:9)

1. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti.

(Cobalt—Analysis) (Semicarbazide)

SHUBENKO V.A., doktor tekhn.nauk, prof.; SHREYNER, R.T., inzh.; LIKHOSHERST, V.I., inzh.

Construction of converters for frequency speed regulation of electric drives. Elektrotekhnika 36 no.10:23-26 O '65.

(MIRA 18:10)

SHREYNER, S.A.; ZUBOV, P.I.

The structure of gels. Part 11: The dependence of the binding strength on the conditions of formation of gelatin films [with summary in English]. Koll.zhur. 19 no.5:651-653 S-O '57. (MIRA 10:10)

1.Fiziko-khimicheskiy institut im. L.Ya. Karpova i Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti.
(Gelatin)

5(4)

AUTHORS: Shreyner, S. A., Zubov, P. I. SOV/20-124-5-40/62

TITLE: The Determination of Internal Stresses in the Gluing Together of Solid Surfaces (Opredeleniye vnutrennikh napryazheniy pri skleivanii tverdykh poverkhnostey)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1102-1104 (USSR)

ABSTRACT: When investigating the holding power of gelatin solutions the authors found a dependence between the holding power and the conditions under which the gluing intermediate layers were produced. It was assumed that this dependence is determined by various internal (contracting) stresses which reduce the degree of adhesive power. In this connection, a quantitative estimation of internal stresses is of special interest. In transparent isotopic films on solid surfaces the degree of stress can be optically determined. However, in nontransparent films determination of double refraction is very difficult. These difficulties may be overcome by providing a base made of transparent isotropic material with elastic properties. In this case it is possible, from the variation of double refraction in the base, (i.e. beyond the boundaries of the zone

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in which the adhesive layer of the adhesive film is produced) to draw conclusions as to the internal stresses in the films. This assumption served as a basis for raising the problem and for carrying out the present investigation. The films to be investigated were deposited by vaporization on the surface of tetrahedral rectangular glass prisms. According to preliminary experiments phase difference actually occurs during the formation of the gelatin film on the surface of the glass prism, which, however, is distributed irregularly over the individual prisms. The smallest phase difference occurs, as may be expected, in the layers adjoining the boundary between glass and film. With increasing distance between the glass layer and the separating surface, the difference decreases according to a linear law, and, at a distance of $h \approx 3$, it attains the value zero. With a further increase of h, the curve becomes more complicated. By extrapolation of the phase difference up to $h = 0$, the integral amount of double refraction and, consequently, also the internal stress in the base (as a function of internal stress in the film) can be determined. There are 4 figures and 2 Soviet references.

The Determination of Internal Stresses in the Gluing Together of Solid Surfaces SOV/20-124-5-40/62

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Scientific Research Institute imeni L. Ya. Karpov). Leningradskiy tekhnologicheskiy institut pishchevoy promyshlennosti (Leningrad Technological Institute of the Food Industry)

PRESENTED: August 16, 1958, by V. A. Kargin, Academician

SUBMITTED: August 6, 1958

Card 3/3

S/069/60/022/004/002/003
B015/B054

AUTHORS: Shreyman, S. A., Zubov, P. I.

TITLE: Influence of Internal Stresses on the Adhesion Properties of Gelatin Films

PERIODICAL: Kolloidnyy zhurnal, 1960, Vol. 22, No. 4, pp. 497-502

TEXT: The present article is the 20th communication of the series "Structure of Gels". The authors determined the influence of low-molecular admixtures on the amount and distribution of internal stresses in gelatin layers which a) as an adhesive layer joined two ТФ-1 (TF-1) glass prisms (Figs. 2, 3, structure of the adhesive gelatin layer); b) were applied as an adhesive film to glass. The authors measured birefringence by means of a polarization microscope. They investigated the dependence of the adhesive power on the formation conditions of the adhesive layers of 20% gelatin solutions with and without admixture (2 M urea solution, 2 M acetamide, or 0.45 M Na_2SO_4) (Table, Fig. 4). The investigations of the kinetics of development of internal stresses in the formation of films on glass surfaces showed that there was a linear relation between stress and film

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S/190/62/004/011/010/014
B106/B101

15.9500
15.9121

AUTHORS: Shreyner, S. A., Zubov, P. I., Volkova, T. A.

TITLE: Study of the internal stresses in foils of epoxy resin

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 11, 1962, 1714 - 1717

TEXT: The increase and decrease of the internal stresses was studied in adhesive foils of ЭД-5 (ED-5) epoxy resin as a function of the solidification temperature and of the nature of the solidifier. When the foils solidify in the presence of polyethylene polyamine above sulfuric acid at room temperature, the internal stresses increase slowly in time and after 20 days they reach the constant value of 4 kg/cm^2. If the solidification is performed at 110°C no stresses occur; this indicates a high rate of relaxation. When the foils are cooled to -20°C, stresses of ~70 kg/cm^2 occur at first, which decrease by relaxation to a constant value of 40 kg/cm^2 when the foils are kept for 3 days at 20°C. These internal stresses are reversible and depend on temperature, heating time, and chemical nature of the solidifier. The relaxation time, too, depends

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on the nature of the solidifier and decreases in the order polyethylene polyamine > phenol formaldehyde resin > hexamethylene diamine. The relaxation proceeds according to the equation of F. Shvedov (J. de Physique, 8, 341, 1889). The results imply that the stresses are caused by differences in the thermal expansion coefficients as between the foils and the supports. When the foils solidify in the presence of polyethylene polyamine at 110°C, the internal stresses as well as the microhardness of the epoxy resin foils increase proportionally to the increasing concentration of the solidifier, pass through a maximum with 6 - 8% polyethylene polyamine, and decrease again. Hence, maximum crosslinking is inhibited by a deficiency as well as by an excess of solidifier. When the foils form in the presence of phenol formaldehyde resin, the internal stresses increase monotonically with the concentration of the solidifier. With increasing thickness of the foils, the stresses increase linearly. When the critical stress values of 120 - 140 kg/cm^2 are reached, the films become subject to a spontaneous cohesive peeling-off. There are 7 figures. The English-language references are: N. A. de Bruyne, J. Appl. Chem., 6, 303, 1956; R. M. Mc Rintock, M. J. Hiza, Mod. Plast., 1958, 172.

Study of the internal stresses... S/190/62/004/011/010/014
B106/B101

ASSOCIATION: Institut fizicheskoy khimii AN SSSR (Institute of Physical Chemistry AS USSR). Leningradskiy filial GIPI-4 (Leningrad Branch of the GIPI-4)

SUBMITTED: July 11, 1961

Card 3/3

L 18589-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 ASD(m)-3 RM
ACCESSION NR: AP4045407 S/0069/64/026/005/0629/0632

AUTHOR: Shreyner, S. A.; Zubov, P. I.; Volkova, T. A.; Vakulovskaya, I. I.

TITLE: Effect of fillers on the internal stresses in films of epoxy resins

SOURCE: Kolloidny*y zhurnal, v. 26, no. 5, 1964, 629-632

TOPIC TAGS: epoxy resin, filler, vitrification temperature, internal stress

ABSTRACT: Experimental data were obtained on the effects of different fillers on the magnitude of internal stresses and thermal properties of films made of epoxy resin E-33. The fillers were: titanium dioxide (rutile), isomorphic mixture of 65% $PbCrO_4$ - 35% $PbSO_4$ and $ZnCrO_3 \cdot 3Zn(OH)_2$. The fillers were thoroughly dried and added in to a fixed amount of epoxy resin dissolved in 30% acetone, 40% cellulose and 30% xylene. In order to insure uniform distribution of fillers in the dispersions they were mixed in a ball mill for 24 hours. The dryer (polyamide with amine number 216) was introduced into the epoxy resin-filler mixture just before production of film in an amount of 30 parts of dryer by weight to 100

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L 18589-65
ACCESSION NR: AP4045407

parts of resin. Films were made on the faces of glass prisms and dried at 150C for 22 hours. Stresses were determined by the optical method after cooling for one hour to room temperature. It was found that fillers cause increase of internal stresses and also increase of vitrification temperature. For all fillers the curves of the increase of vitrification temperature as a function of the content of filler are analogous in shape. The increase of internal stresses and vitrification temperature results from inhibition of relaxation processes due to the interaction of the surface of the filler with binder. Orig. art. has: 4 figures.

ASSOCIATION: Institut Fizicheskoy Khimii AN SSSR (Institute of Physical Chemistry AN SSSR)

SUBMITTED: 02Oct63 ENCL: 00

SUB CODE: GC, MT NO REF SOV: 007 OTHER: 003

Card 2/2

L 01803-67 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6030605 (AN) SOURCE CODE: UR/0413/66/000/016/0093/0093

40
B

INVENTOR: Yeliseyeva, V. I.; Avetisyan, I. S.; Drezel'a, S. S.; Zubov, P. I.; Popov, V. A.; Makarov, Yu. A.; Izmaylova, I. S.; Orlova, K. G.; Gerasimova, A. S.; Gordonov, M. D.; Il'chenko, G. I.; Shreyner, S. A.

ORG: none

TITLE: Method of obtaining alkyl acrylate copolymers. Class 39, No. 185057

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 93

TOPIC TAGS: copolymer, copolymerization, monomer, alkyl acrylate

ABSTRACT: An Author Certificate has been issued for a method of obtaining alkyl acrylate copolymers with a vinyl acetate by emulsion copolymerization of the proper monomers in the water phase in the presence of an anion emulsifier. To obtain stable dispersions, 1—5 mol % unsaturated carboxylic acid, such as methacrylic acid, is introduced into the initial monomer mixture. [Translation] [NT]

SUB CODE: 07/ SUBM DATE: 16Jan65/

UDC: 678.744.32-139

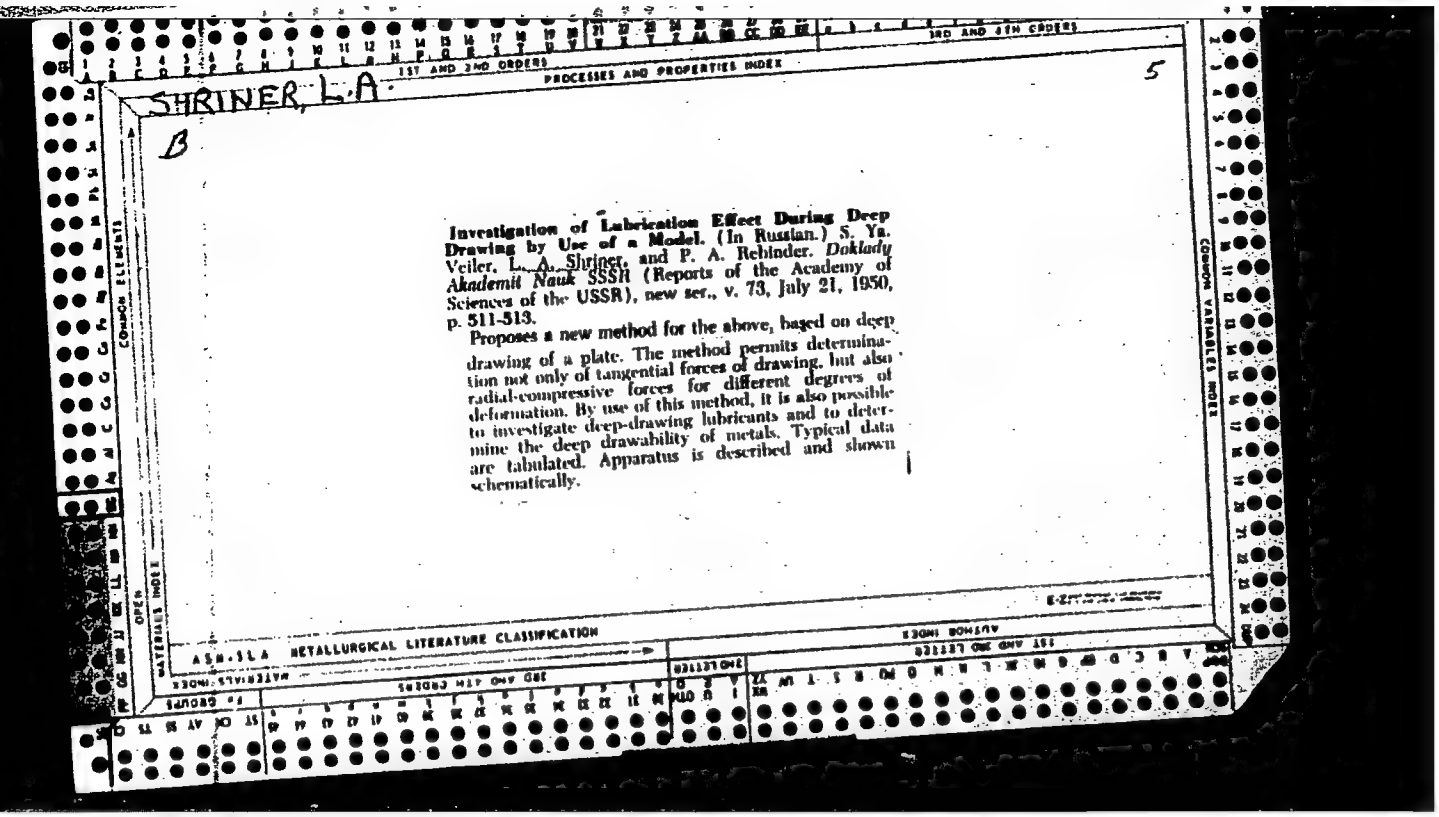
Card 1/1

SURTVADZE, DZH. V.

Dissertations defended at the Institute of Mechanics for the academic degree of Candidate of Physicomathematical Sciences: 1962

"Several Problems of Magnetic Hydrodynamics."

Vestnik Akad Nauk, No. 4, 1963, pp. 119-145



Investigation of Lubrication Effect During Deep Drawing by Use of a Model. (In Russian.) S. Ya. Veiler, L. A. Shriner, and P. A. Rebinder. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 73, July 21, 1950, p. 511-513.

Proposes a new method for the above, based on deep drawing of a plate. The method permits determination not only of tangential forces of drawing, but also radial-compressive forces for different degrees of deformation. By use of this method, it is also possible to investigate deep-drawing lubricants and to determine the deep drawability of metals. Typical data are tabulated. Apparatus is described and shown schematically.

ACC NR: AP7003204 SOURCE CODE: UR/0056/66/051/006/1639/1642

AUTHOR: Belov, K. P.; Goryaga, A. N.; Shrinivasan, S.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: Behavior of the initial susceptibility of the paraprocess in ferromagnets and ferrimagnets near the Curie temperature

SOURCE: Zh eksper i teor fiz, v. 51, no. 6, 1966, 1639-1642

TOPIC TAGS: magnetic susceptibility, second order phase transition, ferrite, Curie point, thermodynamic calculation

ABSTRACT: The purpose of the investigation was to check whether the temperature dependence of the initial susceptibility, as derived from the molecular-field and the thermodynamic theory of second-order phase transitions, holds true for the description of the magnetic susceptibility in ferrimagnets, especially ferrites, near their Curie point. To this end, the magnetic susceptibility of an invar alloy of composition 36 wt.% Ni and 64 wt.% Fe and in ferrites of the system $Ni_{1-x}Zn_xFe_2O_4$ ($x = 0.0 - 0.75$) was measured in the vicinity of the Curie temperature in both weak and strong fields. In addition, the sample was subjected to two different homogenizing heat treatments. The results obtained by the method of thermodynamic coefficients differ greatly from those determined in weak fields. Furthermore, the thermodynamic coefficient results did not depend on the heat treatment, whereas those determined in weak fields were strongly dependent on the heat treatment. This is taken as evidence that

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ACC NR: AP7003204

inhomogeneities of the composition greatly affect the behavior of the magnetization curves in weak fields near the Curie point. It is concluded that the theoretical formula $\chi_0^{-1} = A(T - \theta)^{\gamma}$ can be used to describe the susceptibility for a number of ferrites near the Curie point, with γ having approximately the same value (1.30 - 1.37) as for ordinary ferromagnetis. The values of γ for ferrites and for the invar alloy are presented. Orig. art. has: 1 formula and 2 tables.

SUB CODE: 20/ SUBM DATE: 04Jul66/ ORIG REF: 005/ OTH REF: 012

Card 2/2

SHRINKIN, Ye.A., inzhener.

Deep drawing of thin sheet parts. [Izd.] LONITOMASH vol.40:188-193 '56. (MLRA 10:4)

(Deep drawing (Metalwork))

L 46135-66 EWT(1)/EWT(m)/EWP(t)/ETI IJP(c) JD/WW
ACC NR: AP6025972 SOURCE CODE: UR/0051/66/021/001/0130/0131

AUTHOR: Belyy, V. A.; Shripkin, A. M.

ORG: none

TITLE: A variation on the method of recording resonance signals in optically oriented helium

SOURCE: Optika i spektroskopiya, v. 21, no. 1, 1966, 130-131

TOPIC TAGS: nuclear magnetic resonance, electron paramagnetic resonance, resonance absorption, quantum resonance phenomenon, liquid helium, light polarization, circular polarization, polarized luminescence

ABSTRACT: Experiments involving the measurement of paramagnetic resonance in optically oriented helium are described. In recording the modulation of the transverse light beam passing through a vessel containing helium, the authors observed that the modulated signal persisted at the output of the photodetector, even though the external transverse illumination was interrupted. The detected signal showed substantial signal-to-noise ratio as compared with the original level, despite the decrease in its itensity. The phenomenon was explained when light emanating from the helium due to the discharge radiation was observed. This light replaced the original external light source. The authors express their gratitude to Ye. B. Aleksandrov for his interest in this work. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 01Feb66/ OTH REF: 002
UDC: 535.34:533.113:546.291

Card 1/1 mjs

SHRIRA, I. N.

SHRIRA, I. N.: "Changes in the geography of the mining industry in the Rumanian People's Republic." Acad Sci USSR. Inst of Geography. Moscow, 1956. (Dissertation for the Degree of Candidate in Geographical Sciences).

SO: Knizhnaya Letopis', No 23, 1956

SHRIRA, I.N.

The First Scientific Conference on the Geography of the Moldavian S.S.R. Izv. AN SSSR. Ser. geog. no.4:149-152 Jl-Ag '65.
(MIRA 18:8)

SHRIRINYAN, A.A.

Effect on farm animals of alfalfa hay from fields sprayed with benzene hexachloride. Izv.AN Arm.SSR.Biol.i sel'khoz. nauki 6 no.2: 57-70 '53. (MLRA 9:8)

1. Kafedra klinicheskoy diagnostiki Yerevanskogo zoovetinstituta i sektor zashchity rasteniy Akademii nauk Armyanskoy SSR.
(Benzene hexachloride--Physiological effect) (Alfalfa)

SHRIRO, I.I., inzh.

Some engineering improvements in hydraulic turbines. [Trudy] LMZ no.4:320-326 '57. (MIRA 11:4)
(Hydraulic turbines)

SHRIRO, I.I., inzh.

Achievements of our team. Izobr. i rats. no.6:16-17 Je '58.
(Hydraulic turbines) (MIRA 11:9)

GAMUS, Isaak Mironovich; SHRIRO, I.I., red.; SOBOLEVA, Ye.M., tekhn.red.

[Pneumatic systems in hydroelectric power stations] Pnevmaticheskoe khoziaistvo gidroelektrostantsii. Moskva, Gos.energ. izd-vo, 1959. 127 p. (MIRA 12:9)
(Hydroelectric power stations)

LIVSHITS, M.M., inzh.; SHRIRO, I.I., inzh.

New method of assembling the spiral chambers of hydraulic turbines. (MIRA 14:12)
Energomashinostroenie 7 no.12:35 D '61.
(Hydraulic turbines)

SHRIRO, I.I.

Efficient method for laying-out blanks. Mashinostroitel' no.1: 34 Ja '62. (MIRA 15:1)

(Laying out (Machine-shop practice))

SHRIRO, I.I., inzh.

Remarks concerning V.M. Malyshev's article "Some results of the studies of the acceleration of a semiuniflow unit of the Kama Hydroelectric Power Station." Energomashinostroenie 8 no.10:45 O '62. (MIRA 15:11)
(Kama Hydroelectric Power Station--Turbines--Testing)
(Malyshev, V.M.)

ZHMUD', Adol'f Yelizarovich [deceased]; KANTOVSKIY, V.K., retsenzent; RAUD, M.A., red.; SHIRIRO, I.I., red.; SHCHEGOLEV, G.S., red.; MATARCHUK, G.A., red.izd-va; SPERANSKAYA, O.V., tekhn. red.

[Screw pumps with cycloid engagement]Vintovye nasosy s tsiklo-idal'nym zatsepleniem. Izd.3., perer. i dop. Moskva, Mashgiz, 1963. 153 p. (MIRA 16:3)
(Pumping machinery)

SHRIRO, I.I., inzh.

Hydraulic turbines of the Uch-Kurgan Hydroelectric Power Station.
Energomashinostroenie 9 no.2:1-4 F '63. (MIRA 16:3)
(Uch-Kurgan Hydroelectric Power Station)
(Hydraulic turbines)

SHAIRO, I.I., inzh.

Design of a protective component of the guide blade of a hydraulic turbine. Energomashinostroenie 9 no.3:41-43 Mr '63. (MIRA 17:5)

SHRIRO, I.I., inzh.

Dual submerged spiral chambers. Energomashinostroenie 9 no.12:43 D '63. (MIRA 17:1)

SHRIRO, I.I., inzh.

Thermal design of rubber bearings. [Trudy] LMZ no.10: 222-228 '64. (MIRA 18:12)

SHRIRO, N.A., inzh.

Economic expediency of using open-hearth furnace slags in blast furnaces. Izv. vys. ucheb. zav.; chern.met. no.5:187-195 My '58. (MIRA 11:7)

1.Sibirskiy metallurgicheskiy institut.
(Open-hearth process) (Blast furnaces) (Slag)

SHRIRO, N.A., inzh.

Effective measures in reducing the phosphorus content of cast iron and steel. Izv. vys. ucheb. zav.; chern. met. 2 no.4:145-150 Ap '59. (MIRA 12:8)

1.Sibirskiy metallurgicheskiy institut. Rekomendovano kafedroy ekonomiki i organizatsii proizvodstva Sibirskogo metallurgicheskogo instituta.
(Cast iron--Analysis) (Steel--Analysis) (Phosphorus)

SHRIRO, N.A.

18.000,18.2000

77151
SOV/148-59-9-21/22

AUTHORS: Sachko (Docent, Candidate of Technical Sciences), Mikhaylov, I. G., Shriro, N. A. (Engineers)

TITLE: Concerning the Problem of Selecting Optimal Economical Beneficiation Rates of Iron Ores in Gornaya Shoriya

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1959, Nr 9, pp 179-187 (USSR)

ABSTRACT: In view of the rapid development of ferrous metallurgy anticipated by the current Seven-Year Plan (1959 to 1965) an ore shortage in the Kuznetsk Basin is expected. The blowing-in of new blast furnaces at Kuznetsk Metallurgical Combine (Kuznetskiy metallurgicheskiy kombinat) and West-Siberian Plant (Zapadno-Sibirskiy zavod) will increase this shortage. In this connection the question of the most economical utilization of iron ore arises. As opposed to other areas in the USSR, the coke-to-ore expenditure ratio is rather peculiar in Kuznetsk Basin; i.e., 68% of total expenditures go for mining and preparation. Kuznetsk Metallurgical Combine receives most of its

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ore from the mines of Gornaya Shoriya (6,027,300 ton iron ore, containing 2,310,400 tons iron, in 1957) and Mundybash Sinter-Beneficiation Plant (Mundybashskaya aglomeratsionnoobogatitel'naya fabrika). In 1957 the losses of iron in all mines amounted to 156,700 tons (6.9%), while they were 444,000 ton at Mundybash Plant along. Yu. A. Markhasin (Engineer) of Mundybash Plant showed that a 10% decrease (from 60 to 50%) of iron content in the concentrate lowers the iron content in the tailings by 4% (from 15 to 11%). The authors, in cooperation with G. A. Grazhdan (Engineer), investigated the possibilities of lowering or raising the concentration obtaining the following results: (1) Current concentration at Gornaya Shoriya and Mundybash Plant (57.2% Fe) ensures the most economical production of cast iron at Kuznetsk Metallurgical Combine. Any increase in concentration would lead to greater loss of iron, boosting the cost of cast iron, although higher furnace productivity would increase blast furnace output of the shop by about 4%.

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(2) Lowering of concentration does not increase the cost of cast iron production but leads to considerable saving of iron, estimated to reach about 4 to 5 million rubles per year. Furthermore, by the utilization of additional slag in the production of low-cost cement, another 2 million rubles per year can be saved. However, the produvitivity of the blast furnace shop would decrease by a minimum of 7%, as a result of decreased efficiency. The authors emphasize the need for improved beneficiation techniques and technology in order to cut iron losses. It is assumed that the above changes in the technical and economic performance figures apply to the Abagur Sinter Plant (Abagurskaya aglofabrika) although transportation facilities and preparation techniques should be considered individually. Thsre are 8 tables; and 2 Soviet references.

ASSOCIATION: Siberian Metallurgical Institute (Sibirskiy metallurgicheskiy institut)

SUBMITTED: June 1, 1959

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S/148/60/000/012/019/020
A161/A133

AUTHOR: Smirn, N. A.

TITLE: The effect of hydrogen on the economy of metallurgical production

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 12, 1960, 166 - 172

TEXT: The importance of a higher output of rolled steel for the 7-Year Plan is emphasized and data from eighteen literature sources are reviewed which illustrate losses caused by hydrogen defects in steel. The lower hydrogen content in steel of the Kuznetsk and Magnitogorsk Combines appears to account for lower costs at these plants stated in official statistics for 1955 (Ref. 2: "Calculation for open-hearth steel of the Ministry of Ferrous Metallurgy of USSR plants for 1955". Ministry of ferrous metallurgy, Central accounting office, 1957). The following facts were stated in different works: that the air humidity caused flakes in ball bearing steel, and flakes caused 10 - 12% rejections in winter and 30 - 40% in summer; that steel melted in 300-ton furnaces contained about 0.25 $cm^3/100$ g

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The effect of hydrogen on the economy of...

(or 5 - 7%) less hydrogen than steel melted in 185-ton furnaces, and a lower hydrogen content resulted in better ductility of steel and much lower tendency to flakes. Data of KMK indicate that the output of highest-grade (grade 1) rails dropped from 92.35% to 86.24% when the hydrogen content rose from 4.21 to 4.97 $cm^3/100$ g, and that the weather (air humidity) affected the hydrogen content in steel. An increase of ingot and rolled steel costs can nearly always be traced to an increased hydrogen content, and the only exceptions are the rolled low-standard grades. The practiced cost calculation method does not reveal losses through the H-content, for expenditures are related equally to the 1st and 2nd class products. It is obvious that spouts and ladles dryed inadequately after relining are an additional hydrogen source in steel, and that steel quality can be raised and the costs cut by using intermediate teeming ladles permitting the application of spouts with smaller apertures, for slower filling of ingot molds gives more time for hydrogen to escape. According to K. S. Alferov (Ref. 11: "Trudy nauchno-tekhnicheskogo obshchestva chernoy metallurgii, t. XVIII, Metallurgizdat, 1957, 378 - 379), rejects were cut 3.8% in open-hearth shops and 50% in rolling shops in Cr.5 (St.5) steel production when the ladle spout with 40 mm diameter was replaced with a spout with 30 mm diameter. The increased

life of ingot molds with a slower filling also cuts production costs. Only a small part of the steel is poured through the intermediate devices, i.e. only 15% of the total at the KMK. The author estimates that the measure would cut annual costs by 10 - 14 million rubles at one only plant with 800,000 ton annual output, and the investment for additional equipment would pay in one year. As stated in several works, the H-content in steel increases with a rise in temperature of the molten metal, and overheat increases the quantity of defects, therefore the pouring temperature ought to be regulated and overheat prevented by measurements of metal temperature about three times the heat with immersion thermocouples. Well cleaned ingot molds are also important. The last possible measure against the increase in the hydrogen content in steel is to consider the possible effect of additions for elimination of phosphorus and sulfur, i.e. water introduced with the additives. There are 5 tables, 1 figure and 18 references: 17 Soviet-bloc and 1 non-Soviet-bloc.

ASSOCIATION: Sibirskiy metallurgicheskiy institut (Siberian metallurgic institute)

SUBMITTED: March 16, 1960

SHRIRO, N.A.

Economic efficiency in the making of low-manganese cast iron.
Izv. vys. ucheb. zav.; chern. met. 4 no.10:177-182 '61.
(MIRA 14:11)

1. Sibirskiy metallurgicheskiy institut.
(Iron-manganese alloys) (Metallurgical plants--Accounting)

SHRIRO, N.A.

Economic aspects oxygen-blown converter production. Met. i gornorud. prom. no.1:12-14 Ja-F '65. (MIRA 18:3)

SHROB, A. M.; KRYLOVA, Yu. I.; ANTONOV, V. K.; SHEMYAKIN, M. M.

Enolization of N-acylamides. Izv AN SSSR Ser Khim no. 4:774 Ap '64. (MIRA 17:5)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

SHROBECKI, W.

Contracts for carrying out defined services and individually defined work made by the building construction enterprises with their own and outside employees; as of March 1, 1957. (To be contd.) p.27.

(BUDOWNICTWO PRZEMYSLOWE. Vol. 6, No. 6, June 1957. Warszawa, Poland)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 10, October 1957. Uncl.